

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
4 August 2005 (04.08.2005)

PCT

(10) International Publication Number
WO 2005/070418 A1

(51) International Patent Classification⁷: **A61K 31/407**,
31/7028, 35/12, A61P 35/00

(21) International Application Number:
PCT/GB2005/000215

(22) International Filing Date: 21 January 2005 (21.01.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0401238.1 21 January 2004 (21.01.2004) GB

(71) Applicant (for all designated States except US): **M N L
PHARMA LIMITED** [GB/GB]; Plas Gogerddan, Aberys-
twyth, Ceredigion SY23 3EB (GB).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **NASH,
Robert, James** [GB/GB]; Trefriw-Fach, Tyn-Y-Graig,
Ystrad-Meurig, Ceredigion SY25 6AF (GB). **WATSON,
Alison, Ann** [GB/GB]; Trefriw-Fach, Tyn-Y-Graig,
Ystrad-Meurig, Ceredigion SY25 6AF (GB). **EVINSON,
Emma, Louisa** [GB/GB]; 4 Arborfield Close, Helpston,
Peterborough, Cambridgeshire PE6 7DL (GB). **PARRY,
Hadyn, St Pierre** [GB/GB]; 17 Shortheath Road, Farn-
ham, Surrey GU9 8SR (GB).

(74) Agent: **PRICE, Vincent, Andrew**; Price & Co., 6 Manor
Court, St Georges, Mill Lane, North Chailey, East Sussex
BN8 4EG (GB).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AI, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SI, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GI,
GM, KE, LS, MW, MZ, NA, SD, SI, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO,
SE, SI, SK, TR), OAPI (BF, BJ, CH, CG, CI, CM, GA, GN,
GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the
claims and to be republished in the event of receipt of
amendments

For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: IMMUNOMODULATORY ALKALOIDS

(57) Abstract: Immunotherapy comprises administration of an alkaloid at a dose sufficient to induce IL-2 production in dendritic cells in a patient. The alkaloid induces the production of IL-2 in dendritic cells. The alkaloids need not be naturally occurring, and may be synthetic analogues or derivatives of naturally occurring counterparts. Such analogues or derivatives are preferably pharmaceutically acceptable analogues, salts, isomers or derivatives as herein defined. However, preferred alkaloids are phytochemicals. Such phytochemicals may be isolated from natural sources or synthesised in vitro. Particularly preferred alkaloids are selected from piperidine alkaloids; pyrroline alkaloids; pyrrolidine alkaloids; pyrrolizidine alkaloids; indolizidine alkaloids and nortropane alkaloids.



WO 2005/070418 A1